

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA**

CARNEGIE MELLON UNIVERSITY,)	
)	
Plaintiff,)	
)	
v.)	Civil No. 09-290
)	Judge Nora Barry Fischer
MARVELL TECHNOLOGY GROUP, LTD.,)	
and MARVELL SEMICONDUCTOR, INC.,)	
)	
Defendants.)	

MEMORANDUM OPINION

Presently pending before the Court is a motion filed by Defendants Marvell Technology Group, Ltd., and Marvell Semiconductor, Inc. (collectively, “Marvell”) to exclude the proffered expert testimony of Dr. Christopher Bajorek. (Docket No. 364). Plaintiff Carnegie Mellon University (“CMU”) opposes this motion. (Docket No. 406). The Court heard argument on the motion during its hearing on July 10 and 11, 2012. (Docket No. 433). The motion is now ripe. For the following reasons, Marvell’s motion [364] is GRANTED, in part, and DENIED, in part.

I. BACKGROUND¹

a. *Factual Summary*

This is a patent infringement action in which CMU alleges that Marvell has infringed two of its patents, U.S. Patent Nos. 6,201,839 (the “‘839 Patent”) and 6,438,180 (the “‘180 Patent”) (collectively, the “CMU Patents”). The patents-in-suit are generally directed to sequence detection in high density magnetic recording devices, and more specifically, to high density

¹ As the parties are well aware of the factual and procedural background of this case, the Court will limit its discussion to the background necessary for the resolution of the current motion. For further detail regarding same, see Docket Nos. 306, 337, and 441.

magnetic recording sequence detectors. *See* ‘839 Patent 1:20-23. Both patents claim priority to a May 9, 1997 provisional application. *See* ‘839 Patent; ‘180 Patent. The ‘180 Patent is a continuation-in-part of the ‘839 Patent. *See* ‘180 Patent. The dispute revolves around two technologies: Marvell’s simulation code (“Simulation Programs”) and certain of its chips (“Accused Chips”).

In its claim construction opinion, the Court observed that there was an agreement between the parties as to who would qualify as a person having ordinary skill in the art (“PHOSITA”). (*See* Docket No. 175). The Court found that such a person would have “at least a Master’s degree in electrical engineering who had specialized in data detection and signal processing and had at least two years work experience in the industry.” (*Id.* at 10).

b. *Dr. Bajorek*

Dr. Christopher Bajorek has a Ph.D. in Electrical Engineering and Business Economics from the California Institute of Technology. (Docket No. 407-6 at 5). He has over forty years of experience in the electronics industry, including twenty-five years working in the hard disk drive (“HDD”) industry. (*Id.* at 2-5). His expertise, however, is not in signal processing or sequence detection, but in the magnetic materials used to make the disk or read heads. (Docket No. 407-1 at ¶¶ 7-9, 12-16).

Dr. Bajorek’s opinion presents a sweeping review of the HDD industry. (*See* Docket Nos. 407-1 – 407-7 (hereinafter, “Bajorek Report”). At the hearing on this motion, the Court asked counsel for CMU to state their proffer with respect to Dr. Bajorek. Counsel indicated that “[h]e will be proffered on the opinions that are set out in paragraph 26 through 31 of his report...” (Docket No. 439 at 36). He is being offered “to help the jury understand the complex HDD component sales cycle and the associated industry[,] to opine on the must have nature of

the technology from Marvell[, and] to explain what constitutes a de facto industry standard in the industry...” (*Id.*). Although some of his report does address the technical aspects of the case, the vast majority of his report is directed at a description of the HDD industry, such as industry demands and how the sales cycle works. (*See, e.g.*, Bajorek Report at 9-11, 20-168). He opines that Marvell and its customers follow a sales cycle that is typical in the HDD industry. (*Id.* at 101-161). He likewise opines that the sales cycle is critical to Marvell achieving a “design win,” and that such a design win “cannot be achieved without Marvell’s design being extensively used by Marvell and its customers.” (*Id.* at 168).

II. LEGAL STANDARD

Federal Rules of Evidence 702, which memorializes the Supreme Court’s landmark case *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), provides the basic framework for the admissibility of expert testimony:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliable to the facts of the case.

FED. R. EVID. 702.² The United States Court of Appeals for the Third Circuit has held that “Rule 702 embodies a trilogy of restrictions on expert testimony: qualification, reliability and fit.” *Schneider ex rel. Estate of Schneider v. Fried*, 320 F.3d 396, 404 (3d Cir. 2003) (citations omitted).³ “[T]he district court acts as a gatekeeper, preventing opinion testimony that does not

² FED. R. EVID. 702 was amended in 2000 in response to *Daubert*, but pre-2000 precedent regarding the *Daubert* analysis also applies to the analysis under Rule 702. *See, e.g.*, *Pineda v. Ford Motor Co.*, 520 F.3d 237, 244 (3d Cir. 2008).

³ Under Federal Circuit precedent, the question of “[w]hether proffered evidence should be admitted in a trial is a procedural issue not unique to patent law,” so it is governed by regional

meet the requirements of qualification, reliability and fit from reaching the jury.” *Id.* In this role, the district court is not the finder of fact, but must focus on the methodology of the expert in order to “satisfy itself that ‘good grounds’ exist for the expert’s opinion.” *United States v. Mitchell*, 365 F.3d 215, 244 (3d Cir. 2004) (citing *Daubert*, 509 U.S. at 590); *In re TMI Litigation*, 193 F.3d 613, 713 (3d Cir. 1999) (district court should not conflate “its gatekeeping function with the fact-finders’ function as the assessor of credibility”).

Daubert does not require that a party who proffers expert testimony carry the burden of proving to the judge that the expert’s assessment of the situation is correct. As long as an expert’s scientific testimony rests upon “good grounds, based on what is known,” it should be tested by the adversary process—competing expert testimony and active cross-examination—rather than excluded from jurors’ scrutiny for fear that they will not grasp its complexities or satisfactorily weigh its inadequacies. In short, *Daubert* neither requires nor empowers trial courts to determine which of several competing scientific theories has the best provenance. It demands only that the proponent of the evidence show that the expert’s conclusion has been arrived at in a scientifically sound and methodologically reliable fashion.

Mitchell, 365 F.3d at 244 (quoting *Ruiz-Troche v. Pepsi Cola Bottling Co.*, 161 F.3d 77, 85 (1st Cir. 1998) (citations omitted); see also *Kannankeril v. Terminix Intern., Inc.*, 128 F.3d 802, 809 (3d Cir. 1997) (“The trial judge must be careful not to mistake credibility questions for admissibility questions.”). The party asserting the admissibility of the proffered testimony has the burden to demonstrate by a preponderance of the evidence that the opinions are based on “good grounds.” *Kannankeril*, 128 F.3d at 807.

Qualification requires “that the witness possess specialized expertise.” *Fried*, 320 F.3d at 404. The Third Circuit has “interpreted this requirement liberally,” holding that “a broad range of knowledge, skills and training qualify an expert as such.” *In re Paoli R.R. Yard PCB Litig.*,

circuit law. *Micro Chemical, Inc. v. Lextron, Inc.*, 317 F.3d 1387, 1390-91 (Fed. Cir. 2003) (citing *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1360 (Fed. Cir. 2001)). Thus, the Court applies Third Circuit precedent.

35 F.3d 717, 741 (3d Cir. 1994). The expert's level of expertise may affect the reliability of his testimony, *id.*, such that, where an expert's qualifications are sufficiently low, his testimony may be excluded under the reliability prong. *Elcock v. Kmart Corp.*, 233 F.3d 734, 749 (3d Cir. 2000).

"In a case such as this, where an expert is proffered to testify regarding non-scientific matters, '[t]he relevant reliability concerns [will] focus upon personal knowledge [and] experience' of the witness and the methodology used will be applying that experience to the facts of the case." *Jackson v. City of Pittsburgh*, Civ. No. 07-111, 2010 WL 3222137, *4 (W.D.Pa. Aug. 13, 2010) (quoting *Roberson v. City of Philadelphia*, Civ. No. 99-3574, 2001 WL 210294, at *5, n. 10 (E.D.Pa. Mar. 1, 2001)). Indeed, "where applying the *Daubert* factors does not appear workable, the Court is guided by *Kumho*'s forewarning that in certain cases, the 'relevant reliability inquiry concerns may focus upon personal knowledge or experience.'" *Voilas v. General Motors Corp.*, 73 F.Supp.2d 452, 461 (D.N.J. 1999) (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999)). Under *Kumho*, the *Daubert* factors "neither necessarily nor exclusively appl[y] to all experts or in every case." *Id.* at 141.

With respect to the "fit" prong, the expert testimony must "aid the jury in resolving a factual dispute." *Lauria v. Amtrak*, 145 F.3d 593, 599 (3d Cir. 1998). The task is left to the trial judge of "ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Daubert*, 509 U.S. at 597.

III. ANALYSIS

Marvell challenges portions of Dr. Bajorek's proffered expert testimony under each of the *Daubert* factors. Specifically, Marvell claims that Dr. Bajorek is unqualified to offer testimony on the technical background of the CMU Patents, and as such, it challenges Dr.

Bajorek's opinions in Sections VI, VIII, XI, parts of IX and X, as well as Appendices C through J. (Docket No. 365 at 1). Marvell also attacks the reliability of said opinions, as well as Dr. Bajorek's conclusion that sales of Marvell's products occur within the United States. (*Id.* at 2). In addition, Marvell asserts that Dr. Bajorek's opinions with respect to Sections VIII, IX and X are not relevant to any fact in issue, and therefore lack "fit." (*Id.*).

a. *Qualifications*

Marvell's attack on Dr. Bajorek's qualifications overreaches. An expert witness testifying to non-scientific matters must have "specialized knowledge" in the area of his testimony. *See Waldorf v. Shuta*, 142 F.3d 601, 625 (3d Cir. 1998) ("Rule 702 requires the witness to have 'specialized knowledge' regarding the area of testimony."); *cf. Elcock*, 233 F.3d at 741 (requiring that an expert possess "specialized expertise").

The basis of this specialized knowledge "can be practical experience as well as academic training and credentials." [The United States Court of Appeals for the Third Circuit has] interpreted the specialized knowledge requirement liberally, and ha[s] stated that this policy of liberal admissibility of expert testimony "extends to the substantive as well as the formal qualification of experts." However, "at a minimum, a proffered expert witness ... must possess skill or knowledge greater than the average layman...."

Waldorf, 233 F.3d at 625 (citations omitted).

With respect to his non-technical, market-oriented opinions, Dr. Bajorek is clearly qualified. Entirely aside from his Ph.D. in electrical engineering and business economics, Dr. Bajorek's significant experience in the HDD industry, as described in his Curriculum Vitae (*see* Bajorek Report Appx. A), has given him "skill or knowledge [about the HDD industry] greater than the average layman." *Waldorf*, 233 F.3d at 625 (internal quotations and citations omitted). He is qualified to present his opinions on general market matters, such as the typical HDD industry sales cycle and market demand for signal-to-noise ratio ("SNR") gain. He is also

qualified to discuss what “industry standard” technologies are, in general, and the consequences of not including the same in a product.

At the other end of the spectrum, Dr. Bajorek openly admits that he is not expert in Viterbi technology. (*See* Docket No. 365 at 9-11 (citing excerpts of Dr. Bajorek’s deposition)). But, he is not proffered as an expert witness on such matters. (*See* Docket No. 439 at 36). Dr. Bajorek’s testimony is not directed toward whether Marvell’s technology meets each element of the CMU Patents’ claims, but instead summarizes the infringement opinions of CMU’s well-qualified expert, Dr. McLaughlin. To the extent that his report addresses the technical merits of Marvell’s technology or the CMU patents, Dr. Bajorek is entitled to rely upon Dr. McLaughlin’s report, as it is well-settled that one expert may rely upon another expert’s opinion in formulating his own. *See Dura Auto. Sys. of Indiana, Inc. v. CTS Corp.*, 285 F.3d 609, 613 (7th Cir. 2002) (Posner, J.) (“Now it is common in technical fields for an expert to base an opinion in part on what a different expert believes on the basis of expert knowledge not possessed by the first expert.”). Even so, Dr. Bajorek’s testimony at trial must be limited to his own area of expertise, and he is not qualified to offer his own opinions regarding Viterbi detectors.

Because he is not qualified to testify on the technical aspects of Viterbi detectors or the CMU Patents, Marvell’s motion is granted with respect to those issues.⁴ However, Dr. Bajorek is qualified to testify on the general HDD industry and sales cycle, as discussed above.

b. *Reliability*

As stated above, Marvell also raises reliability challenges to certain sections of Dr. Bajorek’s report. Marvell attacks Dr. Bajorek’s opinions on industry standards, sales location, and use of Accused Chips in enabled mode. (Docket No. 365 at 13-16). With respect to industry

⁴ The Court will entertain proposed limiting instructions in line with this ruling.

standards, Marvell argues that Dr. Bajorek has failed to properly consider the industry and has not performed a technical analysis of what makes a technology an industry standard. (*Id.* at 13-15). It also argues that Dr. Bajorek's opinion does not satisfy the *Daubert* factors for reliability. (*Id.* at 13).

CMU responds that, in the first instance, the *Daubert* factors are not dispositive because Dr. Bajorek is relying upon his experience, rather than scientific knowledge. (Docket No. 406 at 12). CMU then counters Marvell's "industry" argument by noting that the relevant industry is that of the purchasers of hard-drive components, not producers such as Marvell. (*Id.* at 14).

"An expert opinion is reliable when it is based on sound methodology and 'good grounds.'" *Kumho*, 526 U.S. at 137. Where the expert's testimony is based upon personal knowledge and experience, "the methodology used will be applying that experience to the facts of the case." *Jackson*, 2010 WL 3222137 at *4. The Court is also guided by the proposition that "[t]he touchstone of Rule 702 ... is the helpfulness of the expert testimony, *i.e.*, whether it 'will assist the trier of fact to understand the evidence or to determine a fact in issue.'" *Voilas*, 73 F.Supp.2d at 460 (citing *United States v. Downing*, 753 F.2d 1224, 1235 (3d Cir. 1985)).

To this end, the Court finds the analysis in *Voilas* instructive. In that case, the plaintiff's expert "regard[ed] himself as an economic expert with primary experience in calculating economic loss suffered by either personal injury plaintiffs or employee plaintiffs." *Id.* at 455. The defendant challenged his testimony on the grounds that he could not offer reliable testimony on the defendant's business options or the plaintiffs' options under a collective bargaining agreement ("CBA"). *Id.* The challenge was based, *inter alia*, on the fact that the expert followed no methodology, that he merely reviewed the defendant's own analyses in arriving at

his opinions on the defendant's business options, but did not produce his own analysis, and that he failed to consider all possible options plaintiffs could pursue under the CBA. *Id.* at 458-59.

Despite allegedly lacking a concrete methodology, the Court found the expert's testimony reliable because:

Indeed, an experienced economist's clarification and summary of a large corporation's business plans could certainly prove helpful to the average juror who presumably lacks such experience in and knowledge about complex financial matters, even if doing so does not require employing any particular methodology but simply a straightforward review of the corporation's data.

Id. at 461. The Court finds that Dr. Bajorek's testimony will assist the average juror in a similar manner. Therefore, it is sufficiently reliable, even though Dr. Bajorek may not have reached his opinions through a testable methodology.

To the extent that Marvell believes that Dr. Bajorek has incorrectly defined the relevant industry, the Court notes that his conclusions remain subject to cross-examination. The adversarial system ensures that, through "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof," expert testimony may be shown wanting. *Daubert*, 509 U.S. at 596. Additionally, Marvell will have the opportunity to present its own evidence to refute Bajorek's position, including its employees' testimony.

With respect to the issue of the location of the sales, the Court finds that Dr. Bajorek has sufficiently addressed the issue based on information other than invoices and purchase orders. As the Court described it in its November 29, 2010 Memorandum Order, there are a number of factors that may be considered in determining the situs of a sale. (Docket No. 195 at 3-4). Although that analysis was undertaken in the context of demonstrating "the situs of a sale for purposes of section 271 [of the Patent Act]" (*id.* at 3), and such a sale is irrelevant for determining infringement, *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993) (a method claim is not infringed by sale of an apparatus capable of practicing the method), the

analysis under the Patent Act of whether a sale has occurred is governed by general contract law. *Cf. Rotec Industries, Inc. v. Mitsubishi Corp.*, 215 F.3d 1246, 1256 (Fed. Cir. 2000) (concluding that meaning of “offer to sell” is interpreted according to its ordinary meaning in common law); *Pfaff v. Wells Elecs. Inc.*, 525 U.S. 55, 67 (1998) (concluding that the on-sale bar of § 102(b) applies if the product is “the subject of a commercial offer for sale”). Because Dr. Bajorek’s conclusions address many of the pertinent factors mentioned in the Court’s memorandum order, his opinion offers what is, in essence, an appropriate contract law analysis of the location of the sales. While invoices and purchase orders may certainly be part of that analysis, they are not necessary, nor do they dictate the outcome.

Finally, the Court concludes that there is no basis for finding unreliable his opinions on whether the accused products are used in enabled mode. As CMU points out, Dr. Bajorek relies upon both the testimony of Marvell’s customers as well as Dr. McLaughlin’s report in arriving at the conclusion that the products are operated in enabled mode. (Docket No. 406 at 16). As noted, Dr. Bajorek is entitled to rely upon the report of another expert in arriving at his conclusions. *See Dura Auto.*, 283 F.3d at 613. He is likewise entitled to rely upon facts of record. *See* FED.R.EVID. 703. Like the rest of his report, Dr. Bajorek’s opinion on enabled mode use contains copious footnoting with extremely detailed citations. (*See* Docket Nos. 407-1 – 407-7, *passim*). The Court, therefore, sees no basis for finding his opinions unreliable simply because Dr. Bajorek has relied on direct admissions of non-parties or on the opinion of another expert.

c. *Fit*

Marvell’s final challenges to the opinions at hand are directed to the “fit” of Dr. Bajorek’s “industry standard” and “sales cycle” testimony in this case. With respect to Dr.

Bajorek's opinions on the industry standard, Marvell observes that "[e]xpert testimony based on assumptions lacking factual foundation in the record is properly excluded." (Docket No. 365 at 16 (quoting *Meadows v. Anchor Longwall and Rebuild, Inc.*, 306 F. App'x 781, 790 (3d Cir. 2009))). To this end, Marvell argues that Dr. Bajorek has not examined the industry or performed a technical analysis of the alleged industry standard. (*Id.* at 17).

Marvell also asserts that Dr. Bajorek's opinions on the sales cycle are irrelevant to the present matter. (*Id.*). Because sales of a device capable of performing a patented method does not constitute infringement, *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993), Marvell claims the sales cycle is not relevant.

CMU responds that Dr. Bajorek's report establishes why the accused technology is so valuable. (Docket No. 406 at 17). CMU claims that Dr. Bajorek's opinions are relevant to direct infringement, indirect infringement, and damages. (*Id.* at 18). As such, CMU argues that his opinions fit the facts of the case.

The Court once again finds that CMU has the stronger position. Expert testimony must "aid the jury in resolving a factual dispute." *Lauria v. Amtrak*, 145 F.3d 593, 599 (3d Cir. 1998). The task is left to the trial judge to "ensur[e] that an expert's testimony both rests on a reliable foundation and is *relevant to the task at hand*." *Daubert*, 509 U.S. at 597 (emphasis added). The fact that a technology is the "industry standard" surely plays a role in determining the value as "between the patented feature and the unpatented features" of the Accused Chips. *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1317-18 (Fed. Cir. 2011). Likewise, Dr. Bajorek's description of the sales cycle – and the interaction between Marvell and its customers – may be relevant in determining several forms of infringement. For these reasons, Dr. Bajorek's testimony fits this case.

IV. CONCLUSION

For the foregoing reasons, Marvell's motion [364] is GRANTED, in part, and DENIED, in part, in accord with the preceding discussion. As Dr. Bajorek's report does include information on which he is not qualified to provide an expert opinion, he will be precluded from offering such opinions at trial. The parties shall meet and confer and submit a proper limiting instruction in accord with this opinion and the following order.

s/ Nora Barry Fischer
Nora Barry Fischer
United States District Judge

Date: August 24, 2012
cc/ecf: All counsel of record.